Attorney's Docket No. 033339/271282 PATENT

In The United States Patent And Trademark Office

Appl. No.:	10/706,696	Confirmation No.: 8604
Applicant(s):	Varin et al.	
Filed:	11/12/2003	
Art Unit:	3682	
Examiner:	Marcus Charles	
Title:	A RIBBED POWER-TRANSMISSION BELT	

Customer No.: 00826

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Alexandria, VA 22313-1450

APPEAL BRIEF TRANSMITTAL
(PATENT APPLICATION – 37 C.F.R. § 41.37)

1. Transmitted herewith is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on October 1, 2008.

2. ☐ Applicant claims small entity status.

3. Pursuant to 37 C.F.R. § 41.20(b)(2), the fee for filing the Appeal Brief is:
   - ☐ small entity $270.00
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Respectfully submitted,

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APPEAL BRIEF UNDER 37 CFR § 41.37

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" filed October 1, 2008.

Table of Contents

1. ***Real Party in Interest.***

The real party in interest in this appeal is Hutchinson, the assignee of the above-referenced patent application.

2. ***Related Appeals and Interferences.***

There are no related appeals and/or interferences involving this application or its subject matter.

3. ***Status of Claims.***

Claims 1-17 are pending in the application and all stand rejected as unpatentable over a combination of prior art references as set forth in greater detail below. All rejections of record are appealed herein. Accordingly, claims 1-17, which were finally rejected in the Office Action of April 3, 2008, are the subject of this appeal.

4. ***Status of Amendments.***

All claim amendments presented during prosecution were entered and are set forth in the clean copy of the pending claims appended to the brief. Claims 1, 3, 7 and 9 were amended once during prosecution. No amendments have been filed subsequent to the final rejection dated April 3, 2008.

5. ***Summary of Claimed Subject Matter.***

The invention is generally related to a power transmission belt for a motor vehicle and presenting V-ribs made of a single elastomer material and having flat side faces and rounded ridges. Applicants have identified the problem of free zone swelling deformation, which leads to cracking, and how to remedy the problem. Prior to the currently claimed invention, the problem of free zone swelling was not recognized. In fact, prior to the Applicant's identification of the problem of free zone swelling deformation, there was no incentive in the prior art to determine a mean radius of curvature of belt ridges to obtain a satisfactory performance in view of stresses due to (1) swelling and (2) flexing. Thus, unlike belts known in the prior art, the currently claimed belt allows an improved behavior of a belt faced with flexing phenomena while also improving the behavior relative to swelling that generates cracking at the ridges of the belt. In other words, no prior art belt is capable of meeting these two requirements at the same time. As such, belts according to the currently claimed invention exhibit an increased lifetime.

Independent claim 1 recites a power transmission belt for a motor vehicle having the following combination of structural features:

(i) V-ribs (3 in Figures 1a-1d and Figure 3) made of a single elastomer material (8 in Figure 3);

(ii) the V-ribs have flat side faces (4 in Figures 1a-1d and Figure 3) and rounded ridges (5 in Figures 1a-1d and Figure 3);

(iii) the rounded ridges present a convex curvilinear profile having a mean radius of curvature greater than 1 mm and less than or equal to 1.5 mm. See page 3, lines 34-36 and page 6, lines 23-29.

Figures 1a and a portion of Figure 3 are shown below for ease of reference.

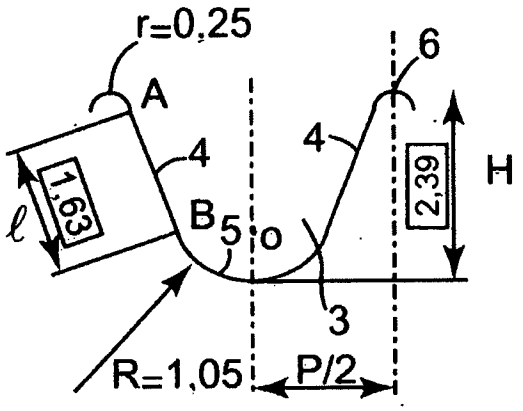


FIG.1a

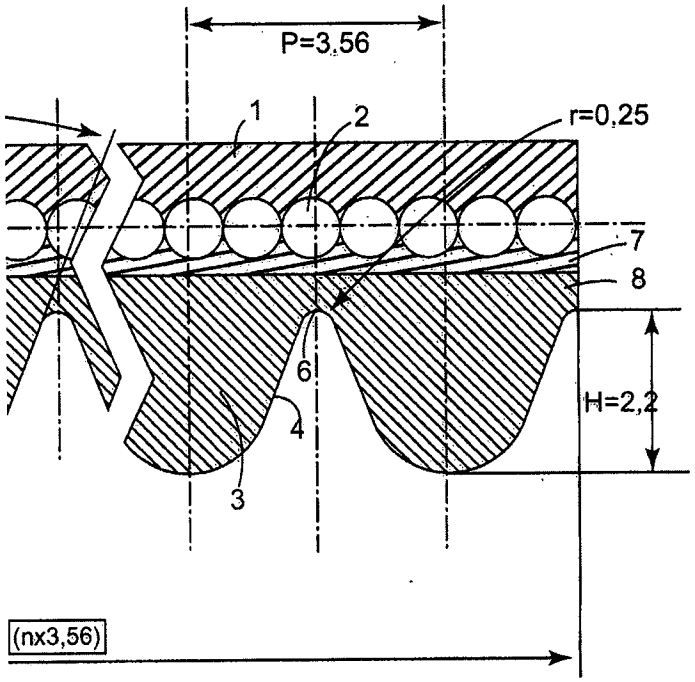


FIG.3

6. ***Grounds of Rejection to be Reviewed on Appeal.***

As stated in the Final Rejection dated April 3, 2008, claims 1-12 and 15-17 are rejected as being unpatentable over US Patent No. 4,981,462 to White et al. (hereinafter "White") in view of US Patent No. 4,904,232 to Kitahama et al. (hereinafter "Kitahama"). Claims 13 and 14 are rejected as being unpatentable over these same references, further in view of US Patent No. 4,011,766 to Waugh (hereinafter "Waugh"). These are the only rejections in this appeal.

As explained more fully below, Applicants submit that the claims as grouped in the final rejection do not stand or fall together. There are several independent reasons why the claims are patentable over the cited prior art. Thus, Applicants have grouped the grounds of rejection as follows:

1) The rejection of claims 1, 4-5, and 11-12 under 35 U.S.C. §103(a) as being obvious over White in view of Kitahama;

2) The rejection of claims 2-3 under 35 U.S.C. §103(a) as being obvious over White in view of Kitahama;

3) The rejection of claim 15 under 35 U.S.C. §103(a) as being obvious over White in view of Kitahama;

4) The rejection of claims 6-7 and 16 under 35 U.S.C. §103(a) as being obvious over White in view of Kitahama;

5) The rejection of claims 8-10 and 17 under 35 U.S.C. §103(a) as being obvious over White in view of Kitahama;

6) The rejection of claims 13 and 14 under 35 U.S.C. §103(a) as being obvious over White and Kitahama, and further in view of Waugh.

7. ***Argument.***

The Subject Matter of the Claims is Not Obvious
Based on the Combination of White and Kitahama

In the obviousness rejection, the Examiner asserts that White discloses a transmission belt comprising V-ribs made from a single material, wherein the V-ribs have flat side faces and round ridges. However, the Examiner acknowledges that White fails to disclose the claimed ridge radius. See the final Office Action dated April 3, 2008, page 2. In an attempt to cure the deficiency of White, the Examiner cites Kitahama for teaching ribs that include circular tips/ridges having a radius from 0.5 to 1.1 mm. The Examiner concludes that it would have been obvious to a skilled artisan to "modify the belt of White et al. so that the rib tip has a convex curvilinear radius, the height of the rib and the length of the flat side that fall within the ranges as disclosed by Kitahama et al. in order to increase the lifetime ratio of the belt." *Id.* at page 3.

To establish a *prima facie* case of obviousness, according to a test predominately used by the courts, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim elements. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck,* 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

With regard to the Supreme Court's decision in *KSR Int'l. Co. v. Teleflex, Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (2007), it is noted that the Court did not dismiss the usefulness the well-established "teaching, suggestion, or motivation" test set forth above, but merely cautioned against its rigid application. The Supreme Court in *KSR* commented that the Federal Circuit 'no doubt has applied the test in accord with these principles [set forth in *KSR*] in many cases.'' *Id.* at ___, 82 USPQ2d at 1396. However, the Supreme Court also opined that "[t]he combination of

familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. . ." *Id.* at ___, 82 USPQ2d at 1395-96. Regardless of the precise test used, the Court, quoting *In re Kahn*, cautioned that " '[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.' " *Id* . at ___, 82 USPQ2d at 1396.

Applicants submit that the Office has not proven a *prima facie* case of obviousness because neither the references cited nor the knowledge generally available in the art provides any suggestion to modify or combine the prior art in the manner suggested by the Examiner. In fact, Kitahama actually teaches away from belts such as those taught by White having teeth consisting of a single elastomeric material.

Secondly, the purported combination of references is not predictable in the fashion put forth by the Examiner and as required by KSR. In this regard, it would not be predictable to apply the tip/ridge dimensions of Kitahama to the single elastomeric ribs of White since the geometry of the rib tips disclosed in Kitahama is taught to be a function of utilizing ribs comprising two different materials having different degrees of hardness. Indeed, in KSR in the context of the importance of predictability with respect to propriety of a combination of references, the Supreme Court extensively discusses U.S. v. Adams, 383 U.S. 39 (1966). In U.S. v. Adams, the Supreme Court found the claims not to be obvious even though the claims were drawn to a structure already known in the art that was altered by the substitution of one known element with another with predictable results since the prior art taught away from combining certain ones of the known elements. *Id.* at 50-52. Moreover, as a matter of practice, MPEP § 2143 describes a number of different rationales for obviousness and requires an Examiner to articulate a number of findings to support an obviousness rejection including, in most instances, a finding that the proposed modification or combination would have been predictable to one of ordinary skill in the art. Consistent with the guidance provided by KSR, MPEP § 2143 also repeatedly notes that obviousness cannot be established under a respective rationale in instances in which an Examiner fails to properly establish any one of the requisite findings, such as in the

present application in which the combination of White and Kitahama does not provide predictable results in light of Kitahama's express teaching away.

1) Claims 1, 4-5, and 11-12 are not obvious over the combination of White and Kitahama

Claims 1, 4-5, and 11-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,981,462 to White et al. (hereinafter "White") in view of U.S. Patent No. 4,904,232 to Kitahama et al. (hereinafter "Kitahama).

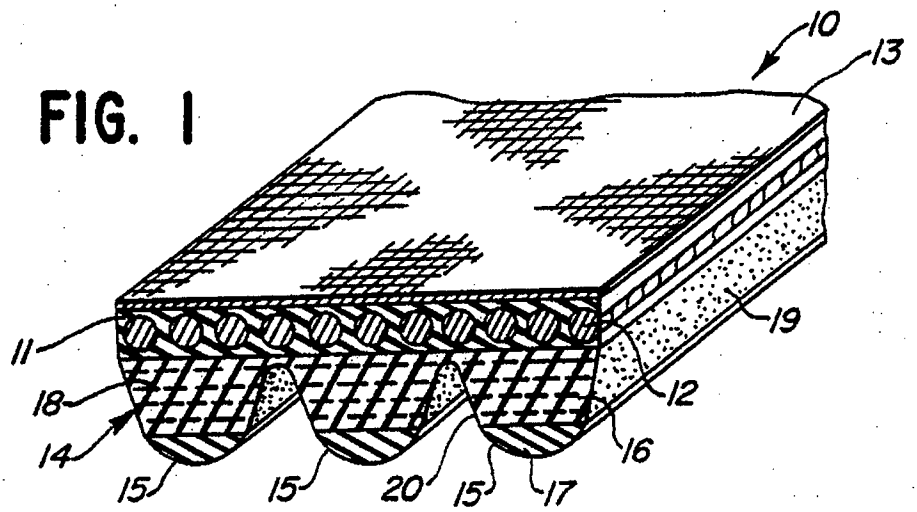
White teaches an endless power transmission belt construction having opposed side edges and having an inner surface of a single elastomeric material defining a plurality of longitudinally disposed and alternately spaced apart like projections and grooves for meshing with an outer peripheral ribbed surface of a rotatable pulley; wherein each projection of the belt construction has a generally V-shaped transverse cross-sectional configuration defined by two substantially straight side edges that converge from the respective apexes of the grooves of the belt construction that are on opposite sides of that projection to an apex of that projection.

White teaches that the side edges of each projection of the belt construction define an angle of approximately 60 degrees therebetween with the thickness of the belt construction being substantially the same as the thickness of a similar belt construction wherein the angle is approximately 40 degrees. In particular, White teaches that the angle between the side edges of each V-rib should be approximately 60 degrees while maintaining the same thickness as prior art belt constructions having an included angle of 40 degrees to reduce belt noise. White teaches that the accumulation of material between the ribs will reduce tension decay of the belt construction. See column 1, line 67 through column 2, line 7.

Unlike White, Kitahama discloses that belts having compression sections comprising a single material, such as those taught by White, form cracks extending outwardly from the distal end of the ribs. Accordingly, Kitahama teaches a ribbed belt including inner and outer compression portions made from different rubber materials. Specifically, Kitahama teaches that "[i]t is preferred that the difference between the hardness of the two portions 16 and 17 be at

least 5° Shore A." See column 3, lines 35-37. As illustrated in Figure 1, reproduced immediately below, the belts taught by Kitahama require ribs 15 including an inner portion 17 and an outer portion 16. As can be seen in Figure 1, the inner portion 17 of the ribs is the surface closest to or adjacent a sheave or pulley and the outer portion 16 of the ribs is surface of the rib adjacent the flat section of the belt.

FIG. 1



Additionally, on column 1, lines 38-56 Kitahama teaches the following:

> The present invention comprehends the provision of such a multiribbed power transmission belt including an outer portion having a plurality of transversely spaced, longitudinally extending tensile cords embedded therein, a fabric cover on an outer surface of the outer portion of the belt, a compression section extending inwardly from said outer portion and defining a plurality of laterally spaced, longitudinally extending ribs, **each rib having an outer portion formed of a first rubber material** and defining inwardly converging planar opposite side surfaces for engaging complementary pulley groove side surfaces, and **an inner portion formed of a second rubber having a hardness less than the hardness of the outer portion** and defining inwardly converging arcuate opposite side surfaces and an inner tip portion, the outer portion planar side surfaces being tangent to the inner portion arcuate side surfaces respectively at a junction of the outer and inner portions of the compression section ribs.

Kitahama teaches that belts having a compression section comprising an outer compression section and an inner compression section wherein the inner compression section is made of a softer material than that of the outer compression section exhibit a substantially greater useful life. See Column 4, lines 39-53. Specifically, Figure 9 illustrates that belts having the distal end of the ribs formed of a softer rubber than that of the outer portion (i.e., belts according to Figure 8) outperform belts having ribs formed of a single material (i.e., belts according to Figure 7). See column 4, lines 32-49. Figures 7-9 are provided immediately below for ease of reference.

FIG. 7

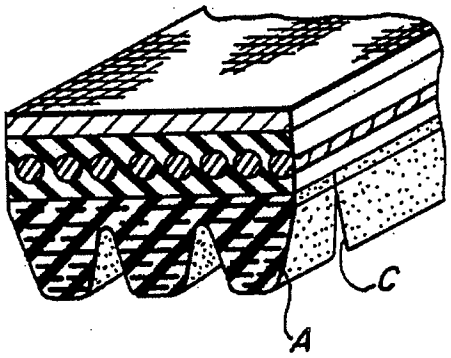


FIG. 8

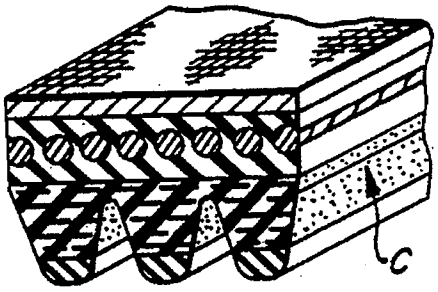
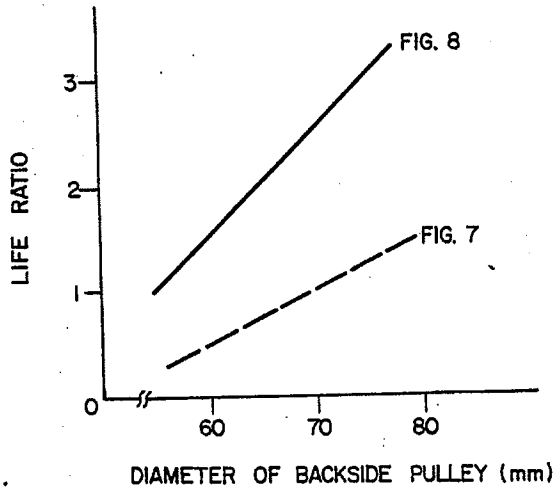


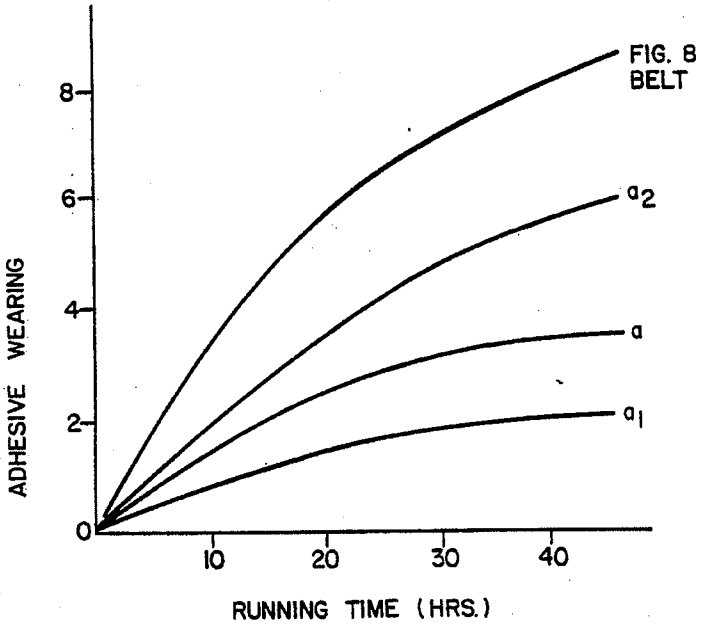
FIG. 9



As shown in Figure 9, Kitahama explicitly teaches that the life time ratio of a belt having ribs with two different materials is significantly greater than belts having ribs constructed from a single material (e.g., the belts taught by White).

Having demonstrated the superiority of belts with ribs formed from two different materials, Kitahama teaches that the tip geometry of these particular belts can be further improved by constructing the inner portion 17 of the compression section (i.e. the softer material) to have circular side surfaces. Figure 6 illustrates the improvement in performance achieved by utilizing circular side surfaces for the inner portion of the compression section. Figure 6 is provided below for ease of reference.

FIG. 6



Of particular importance, Applicants note that Kitahama is explicitly teaching that the improved wear property exhibited by such belts is made possible due to the softer material (i.e., the tip material is softer than the body of the rib) used for constructing the inner portion 17 of the compression section. Further, the use of a softer material for the tip construction enables the circular side surface geometry having a radius between 0.5 to 1.1 mm.

As shown on Figure 11, Kitahama illustrates that the lifetime ratio increases by increasing the radius of the inner portion of the compression section (i.e. the softer material). Furthermore, Kitahama, on column 6, lines 7-11, teaches that "the provision of the arcuate inwardly converging surfaces of the inner portion of the compression section avoid contact thereof with the pulley surfaces, thereby uniformly dispersing stress in the ribs so as to provide the improved crack resistance and wear characteristics." Kitahama teaches using softer rubber to form the tip or inner portion of the ribs so that the cracks tend to form in the outer portion of the ribs that are made of harder rubber. See column 4, lines 39-49. Thus, the tip geometry described by Kitahama was arrived at due to the use of two different materials to form the ribs 15 of the belt, wherein the inner portion 17 (i.e. the tip portion) is made from a softer material than an

outer portion 16. Further, Kitahama does not provide any indication that such geometrical manipulations could be extrapolated to conventional belts having ribs formed from a single material.

Since White fails to teach a belt having the currently claimed geometry, the Office proposes combining White, a belt having ribs formed from a single material, with a belt requiring ribs formed from two different materials (i.e., Kitahama), wherein the geometry of the belt was capable of being modified due to the multi-material rib construction. The skilled artisan, after reading both White and Kitahama, would not be motivated to combine these reference teachings, especially in the manner proposed by the Examiner. As merely one example, one skilled in the art would not be motivated to modify the belt configuration of White with the tip radius of the Kitahama belt simply because the dimensions of the Kitahama belt are a consequence of using two distinct and different materials to form the ribs of the belt. Thus, the Kitahama rib tip dimensions would not appear to be suitable for belts having single material ribs such as White.

Further, Kitahama does not provide any suggestion that the belt geometry derived from utilizing multiple materials for forming the ribs of a belt would be suitable for belts having ribs formed from a single material. In fact, Kitahama teaches just the opposite. First, Kitahama demonstrates the superiority of multi-material ribbed belts over single material ribbed belts, such as described in White. Second, Kitahama teaches that a further advantage of multi-material ribbed belts is that the geometry of the inner section 17, being the softer of the two, can be manipulated to further improve the performance of such a belt. Without the utilization of two distinct and different materials for forming the ribs of the belt, the geometrical tip changes described in Kitahama made no sense. In fact, Kitahama is specific of this feature, and Kitahama's teaching as to the geometrical change of the ribs makes sense only if there exists a softer rubber in the inner portion 17 of the ribs.

The Examiner proposes combining White and Kitahama, in the manner such that a resulting belt would have a compression section formed of a single elastomeric material. However, to combine White and Kitahama in the manner suggested by the Examiner requires blatant disregard for the teachings of Kitahama. Upon reading Kitahama the skilled artisan

would clearly not be motivated to retain the single elastomeric material rib construction of White, much less while also only selecting the tip geometry of Kitahama to form a ribbed belt. The skilled artisan would not be motivated to make such a calculated combination because Kitahama specifically shows that one of the advantages of using a compression section having an outer and inner portion of different materials is an increased life ratio. See column 4, lines 44-46 and Figure 9. Accordingly, Kitahama provides an overwhelmingly convincing showing that single material ribbed belts such as White are significantly inferior. One skilled in the art would clearly not be motivated to retain an inferior design aspect (i.e. ribs formed from a single material) when presented with a superior alternative (i.e. ribs formed from two different materials). As such, Kitahama undoubtedly teaches away from White, and thus the combination of the two references.

Furthermore, the purpose of the curvature of the inner portion 17 of the ribs in Kitahama is to avoid contact with the pulley to minimize wear. See column 1, lines 25-32. Thus, it is clear that Kitahama teaches a means to avoid cracks in the ribs of a belt when reversely bent in a drive system, only when the ribs are made of two different materials. Accordingly, Kitahama acknowledges the fact that he cannot provide a solution with a rib made of a single rubber material.

After reading Kitahama, one skilled in the art would be incited to steer away from using only one material of construction for the compression section of belts. As discussed on column 6, lines 7-11, Kitahama's geometrical change of the ribs makes sense only if a softer rubber in the inner portion 17 of the ribs is utilized. As such, the teaching of Kitahama cannot be applied to a belt where the ribs are made of a single elastomeric material. Such combination or modification of White lacks a rational basis or expectation of success in light of Kitahama's express teachings. Additionally, the combination/modification proposed by the Examiner also is not predictable as required by KSR. As referenced above, it would not be predictable to combine the tip/ridge dimensions of Kitahama with the single elastomeric ribs of White since the geometry of the rib tips disclosed in Kitahama is taught to be a function of utilizing ribs comprising two different materials having different degrees of hardness. Even if the combination of Kitahama's tip geometry with the belts of White provides predictable results, the

Supreme Court has dictated that claims are not obvious even if a combination were to provide predictable results in circumstances where the prior art teaches away from such a combination. See U.S. v. Adams, 383 U.S. 39 (1966). As discussed above, Kitahama teaches away from such a combination, and White in view of Kitahama fails to provide a *prima facie* case of obviousness that is necessary for a proper rejection of any of the pending claims.

In addition to the arguments presented above, Applicants submit that neither White nor Kitahama teach, suggest, or render predictable the claimed radius of curvature of the ridges. Specifically, neither White nor Kitahama teach, suggest, or render predictable ridges having a radius of curvature greater than 1 mm and less than or equal to 1.5 mm. As acknowledged by the Examiner, White does not teach the claimed radius. Thus, the Examiner relies on Kitahama for teaching the currently claimed ridge radius. However, only teaches belts having a ridge radius from 0.5 to 1.1 mm.

Despite White and Kitahama being prior art for all that each discloses, the prior art (i.e., Kitahama and White) must enable a person of ordinary skill in the art to make and use the later invention (i.e., the currently claimed invention). See Beckman Instruments v. LKB Produkter AB, 892 F.2d 1547, 1551. As acknowledged by the Examiner, White does not teach the claimed radius and thus fails to provide a disclosure that would enable a skilled artisan to make or use the currently claimed invention. Kitahama teaches belts including V-ribs of two materials and having a ridge radius from 0.5 to 1.1 mm. However, Kitahama fails to enable any belts having a ridge radius of curvature above 1.1 mm. In fact, only one belt described by Kitahama has a ridge radius within the range recited in independent claim 1. More specifically, Kitahama's single reference to a radius of 1.1 mm is at the lower end of the claimed range, while all other belts described by Kitahama have a radius well below the range recited in independent claim 1. As such, Kitahama is really directed to and enables belts characterized by a ridge radius distinctively smaller than that which is currently claimed. Not only does Kitahama fail to teach V-ribs having the currently claimed ridge radius of curvature, but Kitahama also fails to teach a V-rib made of a single elastomer material and having the claimed ridge radius of curvature. Accordingly, any combination of White and Kitahama fails to render any of the currently pending claims as obvious.

2) Claims 2-3 are not obvious over the combination of White and Kitahama

Claims 2-3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over White in view of Kitahama.

Claim 2 recites a belt including rounded ridges having a range of curvature from 1.05 to 1.45 mm. Claim 3 recites a belt including rounded ridges having a range of curvature from 1.1 to 1.3 mm.

As discussed above, White does not teach the claimed radius range and Kitahama fails to teach or enable any belt having a ridge radius greater than 1.1 mm. Applicants note that the range of curvature recited in claim 2 encompasses a range of 0.45 mm (i.e., 1.45 mm – 1.05 mm). Kitahama's reference to a single belt having a radius of curvature of 1.1 mm covers only 1 point within the recited range. Further, this single point falls within the lower 0.05 mm of the 45 mm range recited in claim 2. At best, therefore, Kitahama's teaching accounts for about 11% of the bottom end of the claimed range. Stated differently, Kitahama fails to teach or enable belts having a radius of curvature within about 89% of the range recited in claim 2. With respect to claim 3, Kitahama's teaching merely overlaps the claimed range by a single point. As such, Kitahama clearly does not teach or enable the claimed ranges of curvature for the ridges.

As noted above, the prior art must enable a person of ordinary skill in the art to make and use the later invention (i.e., the currently claimed invention). See Beckman Instruments, at 1551. For at least this reason, claims 2-3 are not obvious over the combination of White and Kitahama.

3) Claim 15 is not obvious over the combination of White and Kitahama

Claim 15 stands rejected under 35 U.S.C. §103(a) as being unpatentable over White in view of Kitahama.

Claim 15 recites a belt including rounded ridges having a range of curvature from 1.15 to 1.25 mm.

Again, White does not teach the claimed radius range and Kitahama fails to teach or enable any belt having a ridge radius greater than 1.1 mm. Therefore, neither White, Kitahama, nor any combination thereof teaches the claimed radius of curvature (i.e., 1.15-1.25 mm) recited in claim 15. Since neither reference teaches a belt having rounded ridges of curvature from 1.15 to 1.25 mm, neither reference or in combination thereof enables the belt claimed according to claim 15. As noted above, the prior art must enable a person of ordinary skill in the art to make and use the later invention (i.e., the currently claimed invention). See Beckman Instruments, at 1551. For at least this reason, claim 15 is not obvious over the combination of White and Kitahama.

4) Claims 6-7 and 16 is not obvious over the combination of White and Kitahama

Claims 6-7 and 16 are dependent upon claim 1 and recite the length (ℓ) ranges from 0.8 to 1.7 mm (claim 6), 1 to 1.5 mm (claim 7), from 1.08 to 1.36 mm (claim 16).

The Examiner has acknowledged that Kitahama does not disclose the ranges set forth in claims 6-7 and 16. See final Office Action dated April 3, 2008, at page 3. It is also clear that these ranges are not taught by White. The Examiner concludes that the currently claimed belt dimensions are merely a matter of "obvious design choice" and the skilled artisan "would be able to make" a belt having the currently recited dimensions by modifying the belts taught by White in light of the teachings of Kitahama. *Id.* At page 3. As discussed above, however, the Examiner argues that Kitahama discloses a belt having a rib height (H) of 2.5 mm, an inner portion of 0.8 mm, and a flat side face (ℓ) of 1.73 mm. See final Office Action dated April 3, 2008, at page 3. As pointed out above, the Examiner has ignored the fact that the inner portion dimension of 0.8 mm is drawn from an example describing a 900 mm belt (column 4, lines 59-62) and the H dimension is drawn from a separate example discussing a completely different belt, namely a 975 mm belt (column 5, lines 36-40). The Examiner fails to provide any support for why a skilled artisan would be motivated to selectively pick one dimension from a 900 mm belt and a second dimension from a 975 mm belt. Kitahama provides no support for such intermixing of belt dimensions as proposed by the Examiner. Consequently, the cited references,

alone or in any combination, fail to teach, suggest, or render predictable a belt having the currently claimed dimensions. Therefore, the only plausible explanation for selectively picking and choosing dimensions from different belts is reliance upon the Applicants' current disclosure. Applicants submit that the values were selected by the Examiner on the sole basis of attempting to reconstruct the currently claimed invention based on Applicants' own disclosure, which is not permitted.

5) Claims 8-10 and 17 is not obvious over the combination of White and Kitahama

Claims 8-10 are dependent upon independent claim1. The claims recite that the height of the ribs (H) ranges from 1.8 mm to 2.4 mm (claim 8), 1.9 mm to 2.3 mm (claim 9), and H is 2.2 mm (claim 10). Claim 10 also recites that the length (ℓ) of the flat side faces are substantially equal to 1.35 mm. Claim 17 recites that H ranges form 2 to 2.2 mm.

The Examiner has acknowledged that Kitahama does not disclose the ranges set forth in claims 8-10 and 17. See final Office Action dated April 3, 2008, at page 3. It is also clear that these ranges are not taught by White. Again, the Examiner summarily concludes that the currently claimed belt dimensions are merely a matter of "obvious design choice" and the skilled artisan "would be able to make" a belt having the currently recited dimensions by modifying the belts taught by White in light of the teachings of Kitahama. *Id.* at page 3. For instance, the Examiner argues that Kitahama discloses a belt having a rib height (H) of 2.5 mm, an inner portion of 0.8 mm, and a flat side face (ℓ) of 1.73 mm. See final Office Action dated April 3, 2008, at page 2. However, the Examiner has ignored the fact that the inner portion dimension of 0.8 mm is drawn from an example describing a 900 mm belt (column 4, lines 59-62) and the H dimension is drawn from a separate example discussing a completely different belt, namely a 975 mm belt (column 5, lines 36-40). The Examiner fails to provide any support for why a skilled artisan would be motivated to selectively pick one dimension from a 900 mm belt and a second dimension from a 975 mm belt. Kitahama provides no support for such intermixing of belt dimensions as proposed by the Examiner. Consequently, the cited references, alone or in

any combination, fail to teach, suggest, or render predictable a belt having the currently claimed dimensions.

The Subject Matter of Claims 13-14 is Not Obvious Based on the Combination of White, Kitahama, and Waugh

Claims 13 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of White and Kitahama, and further in view of US Patent No. 4,011,766 to Waugh (hereinafter "Waugh"). Claim 13 specifies that the V-ribs are obtained by molding. Claim 14 recites that at least the ridges of the V-ribs are machined. The Examiner argues that the combination of White and Kitahama merely fails to disclose that the V-ribs are machined or molded. For this reason, the Examiner cites Waugh for disclosing that molded and machined V-ribs are known to one skilled in the art.

6) Claims 13-14 are not obvious over the combination of White, Kitahama, and Waugh

Claims 13-14 are dependent upon independent claim 1 and therefore each dependent claim also recites a power transmission belt for a motor vehicle and presenting V-ribs made of a single elastomer material and having flat side faces and rounded ridges, wherein said ridges present a convex curvilinear profile having a mean radius of curvature greater than 1 mm and less than or equal to 1.5 mm.

In general, Waugh is directed to an endless power transmission belt consisting of several belt elements interconnected by a tie band. The teeth of each belt element are staggered relative to the adjacent element. The belts taught by Waugh include teeth constructed of multiple materials. See column 4, lines 6-7. The multi-material teeth 23 are illustrated by reference numerals 22 and 31 in Figure 1 (shown immediately below).

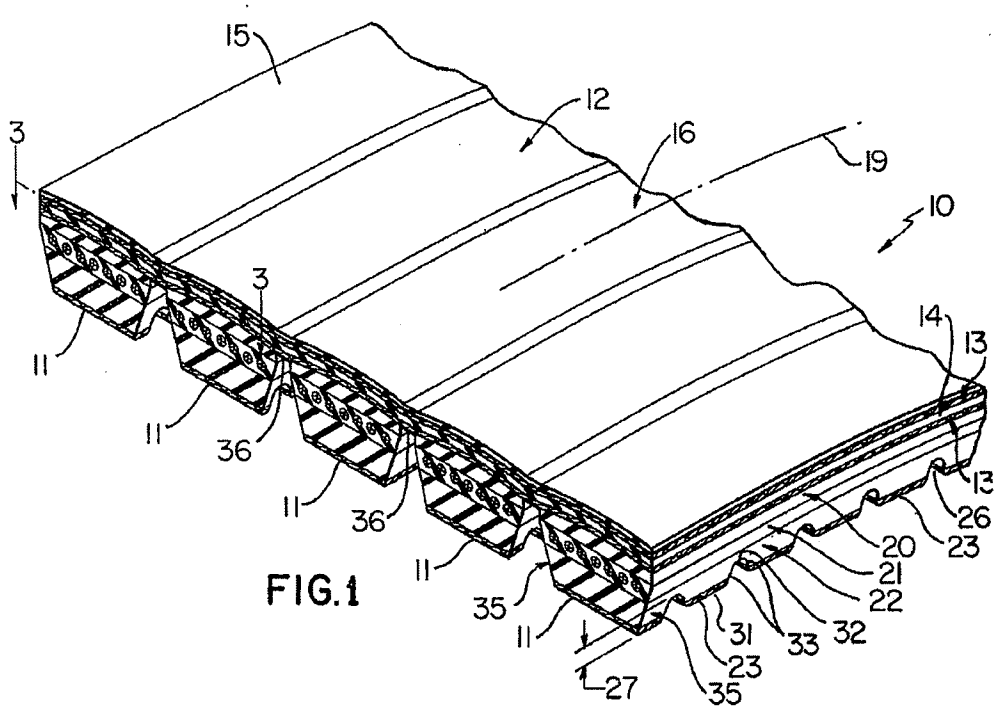


FIG.1

Also, Figures 1 and 7 both illustrate that the belts according to Waugh include teeth having flat tips / ridges. Figure 7 is provided immediately below.

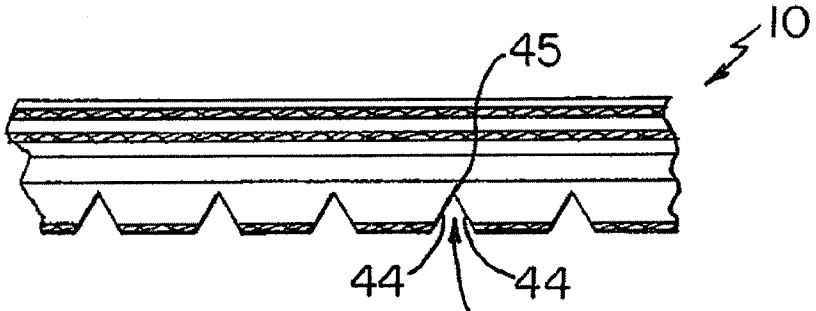


FIG.7

Thus, Waugh fails to teach, suggest, or render predictable a power transmission belt for a motor vehicle including V-ribs having any of the following characteristics: (1) made of a single elastomer material and having flat side faces; (2) rounded ridges; and (3) rounded ridges having a convex curvilinear profile having a mean radius of curvature greater than 1 mm and less than

or equal to 1.5 mm. Additionally, Waugh does not provide any teaching that would conceivably negate Kitahama's express teaching away from belts according to White.

As such, Waugh does not cure any of the deficiencies of the proposed combination of White and Kitahama discussed above with respect to independent claim 1. Moreover, the belts of Waugh are fundamentally different from those of White and Kitahama. Contrary to the belts of White and Kitahama, the belts of Waugh include teeth having flat tips / ridges (Figures 1 and 7). As discussed above, both White and Kitahama are directed to belts having rounded tips/ridges. For instance, White identifies prior art belts having flat tips/ridges (Figure 2) as failing to exhibit certain beneficial properties (i.e., reduction in belt noise and reduction in material accumulation) of belts having rounded tip/ridge belts as taught therein. The Kitahama teachings, as discussed in detail above, clearly highlight the importance of having rounded tips/ridges. In fact, without the rounded tips/ridges Kitahama's belts would not be fit for their intended purpose. Additionally, the belts of Waugh require several belt elements interconnected by a tie band in a manner such that the teeth of each belt element are staggered relative to the adjacent element. Contrary to the belts of Waugh, the belts of White and Kitahama are directed to single element belts. In face, Waugh recognizes this distinction and teaches that the staggered arrangement eliminates the "siren effect" which is common in single element belts such as those taught by White and Kitahama. See column 4, lines 1-5. For at least these differences, a person of ordinary skill in the art would not find the teachings of Waugh to be applicable and would not look to Waugh for curing any deficiencies of White and Kitahama.

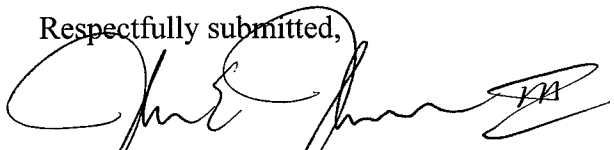
To the Extent one skilled in the art might look to Waugh, the teachings of Waugh actually teach away from single material belts. As referenced above, the belts taught by Waugh include teeth constructed of multiple materials. See column 4, lines 6-7. The multi-material teeth 23 are illustrated by reference numerals 22 and 31 in Figure 1. Accordingly, Waugh teaches away from belts such as those taught by White. Thus, the combination of White, Kitahama and Waugh fails to provide a *prima facie* case of obviousness that is necessary for a proper rejection of claims 13-14.

Therefore, any combination of White, Kitahama, and Waugh does not teach, suggest, or render predictable the features of claims 13 and 14.

CONCLUSION

Applicants have shown that the Examiner has not met the requirements for establishing a *prima facie* case of obviousness under 35 U.S.C. §103(a) because the combination of White and Kitahama would require blatant disregard for the express teachings of Kitahama. More specifically, Kitahama explicitly teaches away from single material ribs and the geometry of the ribs disclosed in Kitahama are possible, as taught be Kitahama, due only to the use of two distinct and different materials for constructing the ribs of the belt. Further, when the prior art teaches away from a particular combination, such a combination cannot be considered obvious. Therefore, Applicants respectfully request that the Board overturn the rejections made by the Examiner and hold that the claims presently on appeal are in allowable form.

Respectfully submitted,



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8. ***Claims Appendix.***

1. A power transmission belt for a motor vehicle and presenting V-ribs made of a single elastomer material and having flat side faces and rounded ridges, wherein said ridges present a convex curvilinear profile having a mean radius of curvature greater than 1 mm and less than or equal to 1.5 mm.

2. A belt according to claim 1, wherein said range of curvature lies in the range 1.05 mm to 1.45 mm.

3. A belt according to claim 2, wherein said range of curvature lies in the range 1.1 mm to 1.3 mm.

4. A belt according to claim 1, wherein said curvilinear profile is a circle of radius equal to said radius of curvature.

5. A belt according to claim 1, wherein the length ℓ of the flat side faces measured between their connections with the bottoms of the teeth and with said ridges lies in the range 0.7 mm to 1.8 mm.

6. A belt according to claim 5, wherein the length ℓ lies in the range 0.8 mm to 1.7 mm.

7. A belt according to claim 6, wherein the length ℓ lies substantially in the range 1 mm to 1.5 mm.

8. A belt according to claim 1, wherein the height H of the ribs lies in the range 1.8 mm to 2.4 mm.

9. A belt according to claim 8, wherein the height H of the ribs lies in the range 1.9 mm to 2.3 mm.

10. A belt according to claim 1, wherein the radius of curvature is substantially equal to 1.15 mm, wherein the rib height H is substantially equal to 2.2 mm, and wherein the length ℓ of the flat side faces is substantially equal to 1.35 mm.

11. A belt according to claim 1, wherein the curvilinear profile is tangential to the side faces at its points of connection with said side faces.

12. A belt according to claim 1, the belt being of the K type.

13. A belt according to claim 1, wherein the V-ribs are obtained by molding.

14. A belt according to claim 1, wherein at least the ridges of the V-ribs are machined.

15. A belt according to claim 2, wherein said range of curvature lies in the range 1.15 mm to 1.25 mm.

16. A belt according to claim 6, wherein the length ℓ lies substantially in the range 1.08 mm to 1.36 mm.

17. A belt according to claim 8, wherein the height H of the ribs lies in the range 2 mm to 2.2 mm.

9. ***Evidence Appendix.***

No additional evidence of patentability has been submitted to the Examiner.

10. ***Related Proceedings Appendix.***

There are no decisions by a court or the Board in related proceedings.